

## SERIES 62T Thumbwheel with Pushbutton

### FEATURES

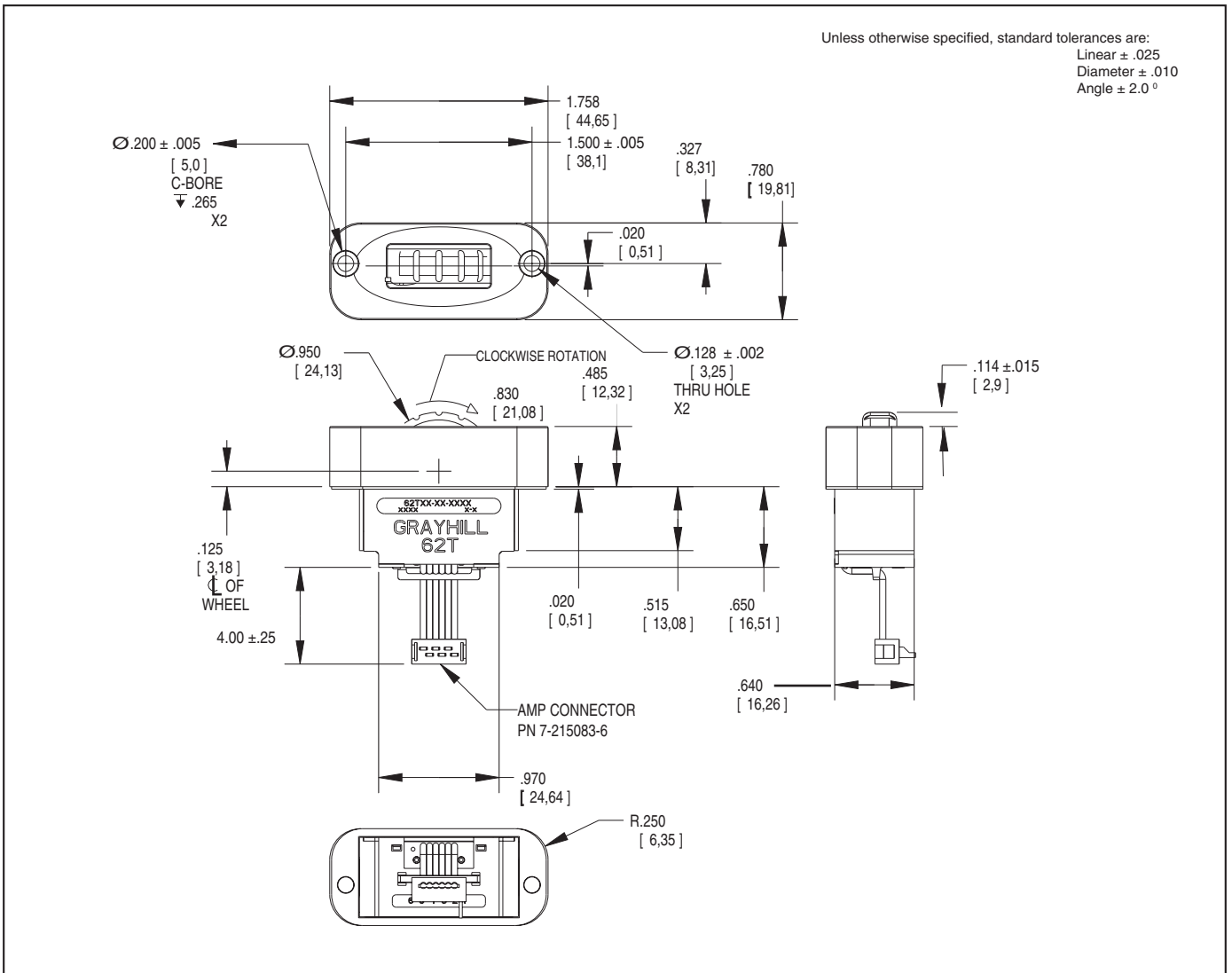
- Scroll and select functions
- Sealed against dust and particles
- Custom bezels that will blend with HMI grips and control panels
- Optional integrated pushbutton with over three million actuations
- MIL-STD-202 and MIL-STD-810F Compliant
- Standard panel seal
- Choice of cable length and termination

### APPLICATIONS

- Scroll & select equipment in industrial and non-automotive transportation applications
- Display selectors
- Hand-grip joysticks

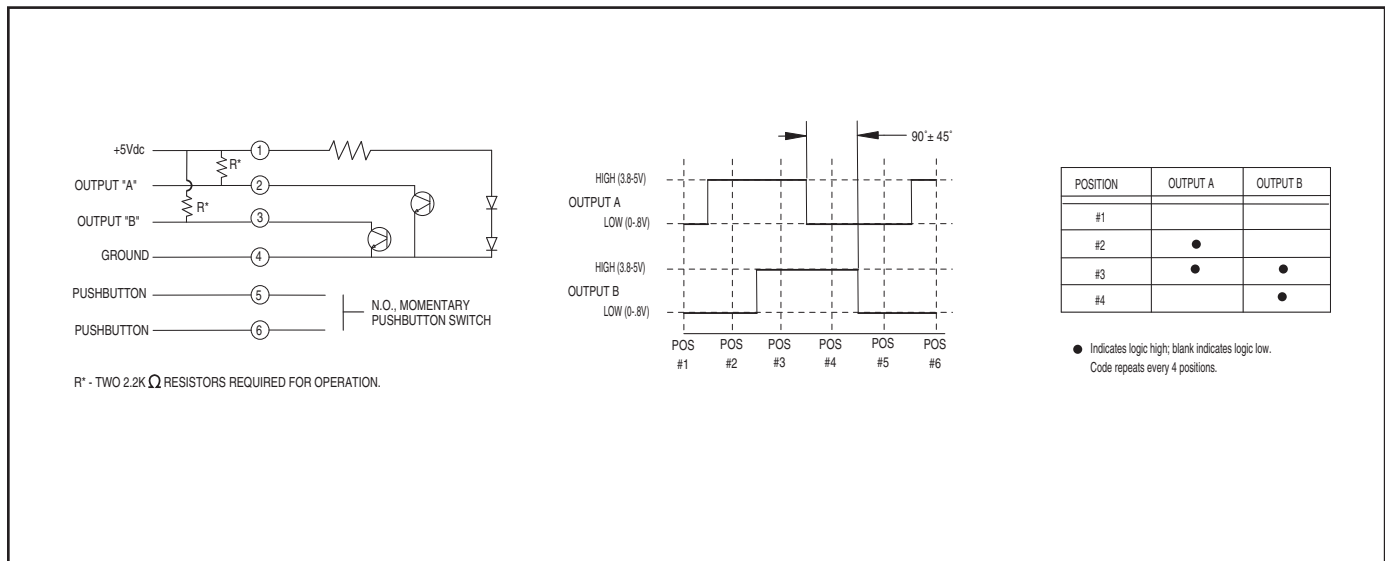


### DIMENSIONS in inches (and millimeters)



Optical and Mechanical Encoders

**WAVEFORM AND TRUTH TABLE**



**SPECIFICATIONS**

**Environmental Specifications**

MIL-STD-810F Qualified  
**Operating Temperature Range:** -40° C to 85° C  
**Storage Temperature Range:** -55° C to 100° C  
**Humidity:** 240 hours at 95% humidity at 30° C  
**Mechanical Vibration:** Harmonic motion with amplitude of 15g, within a varied frequency of 10 to 2000 Hz  
**Mechanical Shock:**  
 Test 1: 100g for 6 ms half-sine wave with a velocity change of 12.3 ft/sec  
 Test 2: 100g for 6 ms sawtooth wave with a velocity change of 9.7 ft/sec

**Pushbutton Electrical and Mechanical Specifications**

**Rating:** 10mA @ 5 Vdc  
**Contact Resistance:** <10ohms  
**Life:** 3 million actuations minimum  
**Contact Bounce:** <4 ms make, <10ms break  
**Actuation Force:** N – None, 7–700g, 10 – 1000g.  
**Thumbwheel Travel:** .060 ± .015 in

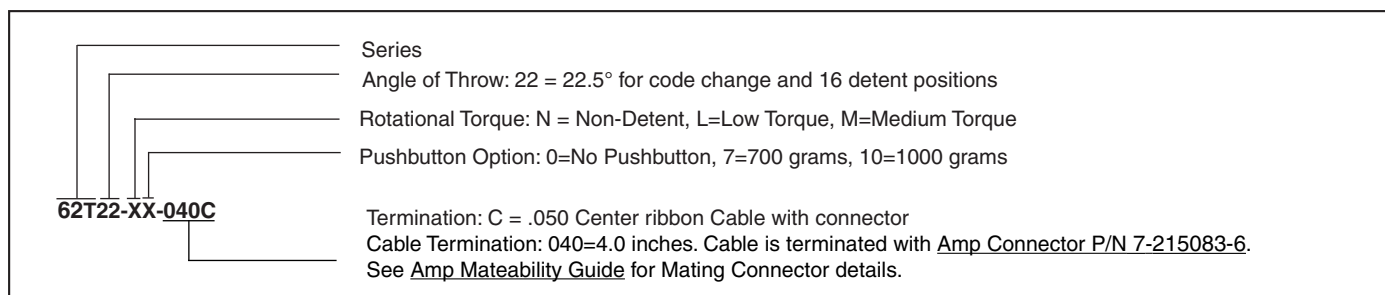
**Rotary Electrical and Mechanical Specifications**

**Operating Voltage:** 5.00±0.25 Vdc  
**Supply Current:** 25mA Max.  
**Output:** Open collector phototransistor, external pull up resistors are required  
**Output Code:** Two-bit quadrature, channel A leads channel B by 90° electrically during clockwise rotation of the thumbwheel  
 Logic high shall be no less than 3.8 Vdc  
 Logic low shall be no greater than 0.8 Vdc  
**Power Consumption:** 125 mW Max.  
**Mechanical Life:** 1,000,000 cycles of operation for Low and Non-Rotational Torque. 500,000 cycles of operation for Medium Rotational Torque. 1 cycle is a rotation through all positions and a full return.  
**Average Rotational Torque:**  
 M: 2.2±.75 in-oz, L: 1.2±0.5 in-oz, N: <0.50 in-oz. Initially torque shall be within 75% of initial value throughout life.

**Materials and Finishes**

**Face Plate:** Plastic  
**Housing:** ABS Plastic  
**Side Plate:** Reinforced thermoplastic  
**Wiper:** Silicone rubber with adhesive  
**Gasket:** Silicone rubber with adhesive  
**Wheel:** Plastic  
**Shaft:** Aluminum  
**Slide Springs:** Music wire  
**Detent Spring:** Music wire  
**Detent Balls:** Nickel plated stainless steel  
**PC Boards:** NEMA grade FR4. Double clad with copper  
 Plated with gold over nickel  
 Pushbutton board is tin plating over copper  
**LED:** Gallium Aluminum Arsenide  
**Phototransistor:** Gold and Aluminum Alloys  
**Code Section Housing:** Reinforced plastic  
**Detent Housing:** Thermoplastic  
**Code Rotor:** Delrin 100 plastic  
**Dome:** Stainless steel  
**Dome retainer:** Delrin 100 plastic  
**Slide Rods:** Stainless steel  
**Splining Key:** Stainless steel  
**Actuator:** Reinforced thermoplastic  
**Screws:** Aluminum or Stainless  
**Wiper Plate:** Copper  
**Solder:** Lead free (96.5% tin, 3% silver, 0.5% copper, no clean)

Optical and Mechanical Encoders



**Available from your local Grayhill Component Distributor.** For pricing and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill.